A Microbial Assessment Scheme for the Cooked Chilled Foods Production Process.

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***Introduction*:** Cooked chilled foods, or REPFEDs (refrigerated and processed foods of extended durability), are a heterogeneous group of food products. Depending on the applied heat treatment during the production process, different pathogens pose a risk. The pathogens of concern are *L. monocytogenes, B. cereus* and *C. botulinum* since these can survive the different types of pasteurisation treatments.

***Purpose*:** This research assessed the microbiological safety and quality of REPFEDs to determine the potential for decreasing the pasteurisation-time/temperature without compromising food safety. A decrease in heat treatment can improve sensorial product quality and reduce production costs.

***Methods*:** A Microbial Assessment Scheme (MAS) was performed in 5 Belgian REPFED-producing companies. Each MAS consisted of 18 sampling locations throughout the processing line, which were sampled 1 to 3 times per sampling day. Sampling locations consisted of both high-risk raw materials, half-fabricates, end products and contact materials during processing and shelf life. A total of 696 samples were analysed for 5 microbial parameters (*B. cereus, L. monocytogenes,* sulphite reducing *Clostridia,* total aerobic psychrotrophic count and aerobic spore count).

***Results*:** Despite the high contamination (6-7 log cfu/25cm^2) of contact materials, the microbial safety and quality of the final products is good to excellent. The majority of these products showed absence of L. *monocytogenes, B. cereus* and sulphite reducing Clostridia. If present, the counts were low and within acceptable limits. The microbial safety of raw materials and half fabricates was more variable, but this situation was corrected by the heat treatment applied in the production process.

***Significance*:** Results indicate that the use of safe harbours delivers safe products and that companies rely to some extent on the heat treatment in the production process to guarantee the food safety of REPFEDs. Yet a reduction in pasteurisation process is possible if the recontamination of the products from contact materials is controlled properly.